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News about you and other alums: (memberships, publications, promotions, honors, awards, etc.)

Performance in Motion
A newsletter distributed to members of the Mentor Society, the generous contributors who are enriching and enhancing our success as a unit at Michigan State University, alumni and friends of Kinesiology

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Kinesiology working on more grants and externally funded projects.

Chair’s message
Despite these hard economic times for higher education, we have much to talk about. We have had a successful fall in new grant awards, our enrollments are healthy, and we are fully operational in our new (3500 sq. ft.) lab space as part of the Center for Physical Activity and Health. The lab exists in the basement floor in space that was part of the women’s locker room in I.M. Sports Circle. The faculty members who are housed in the offices in this space are Jim Pivarnik, Karin Pfeiffer, Joe Eisenmann, and our newest faculty member, Florian Kagerer. This new space will allow us to conduct more research, especially in the pediatric exercise science area and more collaborative research across disciplines.

In this issue of Performance in Motion, you will read about the research going on in our labs and in the field, our international connections, and about faculty, students, and alumni in the news.

Thank you, again, for your generous gifts of financial support. We will continue to use this support to advance the necessary changes we see as rewarding to our communities.
Jim Pivarnik, professor in kinesiology and president of the American College of Sports Medicine in Indianapolis, traversed the wintry conditions of Calgary as he joined 12,000 other torchbearers carrying the Olympic flame from Greece to Vancouver for the 2010 Winter Games. Jim was selected to carry the torch Tuesday, January 19, 2010 by Coca-Cola as one of its 20 ambassadors of positive living. He carried the torch in Calgary.

"It is a humbling feeling to have been chosen for this wonderful event," he said. "I am grateful to my American College of Sports Medicine colleagues for choosing me to represent the organization, as well as the opportunity to represent Michigan State University."

A professor at MSU since 1994, Pivarnik's work focuses on the importance of physical fitness across many platforms. He recently helped the federal government release the first-ever guidelines on physical fitness, developing the section on pregnancy and postpartum activity.

Pivarnik was part of a team that carried the torch on Jan. 18 and Jan. 19, 2010 through Calgary. During its several month journey, the torch visited more than 1,000 communities and traveled over 27,000 miles. Watch Pivarnik describe his preparation for the run at:

http://www.youtube.com/watch?v=4WnxAVKZOss&feature=player_embedded

Michigan State University kinesiology graduate Michelle Rzepka competed in the Olympic bobsled competition in Vancouver and placed in sixth position. Rzepka, who received her bachelor’s degree from MSU in 2005, was the brakeman for teammate Shauna Rohbock, who won the Silver Medal in Torino. While at MSU, Rzepka was a Big 10 indoor and outdoor pole vault champion. She joined the U.S. World Cup bobsled team as a rookie in 2007, and finished in the top-10 in seven of eight World Cup races so far.

MSU kinesiology doctoral student Nicole Forrester, pictured to the left, is a Canadian high-jumper who competed in the 2008 Beijing Olympics and was also selected as a torchbearer. She helped carry the Olympic Flame through Markham, Ontario – just outside her hometown of Aurora – on Dec. 17, 2009. Forrester has since returned to the MSU campus, where the torch she carried was placed on display inside IM Sports Circle. Forrester loaned the torch to the Department of Kinesiology through the duration of the 2010 Winter Games.

The Department of Kinesiology

The faculty in the Department of Kinesiology are committed to the concept that physical activity is inextricably linked to the biological, psychological, and social well-being of children and youth. Programs are available in motor behavior, physiology of exercise, sports administration and coaching, psychosocial aspects of sport and physical activity, and athletic training.


Ankle Injury Research

Powell (light) explores the science of shoe-surface interaction.

by Craig Reed

Injuries are a concern for athletes, especially for those competing at the collegiate and professional levels. John Powell, Ph.D., ATC, explores one injury known as a high ankle sprain.

"A high ankle sprain requires longer for an athlete to recover than from a normal ankle sprain, so it can significantly affect their ability to participate in their sports," said Powell. "To prevent these types of injuries, we have to understand the underlying mechanics.

With little currently known about these sprains, Powell and a team of researchers from a variety of disciplines are studying the problem.

"One thing we explore is the shoe-surface interface," explained Powell. "We look at how different cleat designs interact with different types of turf. We also want to understand the forces on a person as an athlete turns, stops and moves on the turf. We analyze these forces by setting up a test on some of the outdoor turfs and having an infrared camera we have adapted for use outside to observe the mechanics taking place in a moving athlete. The logistics are more challenging than in a laboratory setting. Wind, rain and other weather conditions can affect the delicate calibrations, but we’ve solved most of the problems."

Powell also works to simulate high ankle sprains within the lab. "We take cadaver legs and subject them to what we believe to be the same stresses that contribute to these injuries and study the soft tissue injury patterns," said Powell. "One of the challenges we experienced was in developing an accurate model."

Initially, every time we ran a test, we’d end up with a fracture of the bone rather than the expected soft tissue injuries. After consulting some of the sports medicine doctors, we created a more realistic load distribution, and now our model is working as expected."

"The complexity of this injury requires a collaboration of different researchers to understand," continued Powell. "My focus is on injury patterns, but we are working with engineers in the Orthopaedic Biomechanics Laboratories at MSUCOM to better understand some of the mechanics. We also utilize some large enclosed spaces at the College of Veterinary Medicine which allow us to perform other tests on athletes under more normal playing conditions."

As Powell and his fellow researchers continue to deepen their understanding of high ankle sprain injuries, they remain focused on both athletic performance and safety. "If we focus entirely on preventing injury," said Powell, "we’ll have athletes dissatisfied with the equipment due to a significant drop in their performance. So in the end we want to consider both, so we have the high performance the athletes desire while minimizing the risk of injury."
The Office of International Education and Partnerships in collaboration with the Department of Physical Education at the University of Botswana held a seminar on July 23, 2009 on coaching efficacy to promote the development of winning athletes and sports teams. Feltz presented her work on coaching efficacy—the belief coaches have in their capacity to affect the learning and performance of their athletes—and the importance of good coaching efficacy for team performance. The seminar was attended by coaches and technical teams from the junior and senior national teams of football (i.e., soccer) and by sports academics.

Joe Eisenmann and Karin Pfeiffer are leading the school-based physical activity and physical measurement components, of a 2-year, $1 million grant to MSU from Blue Cross Blue Shield of Michigan to reduce obesity among up to 500 children in selected elementary schools in Grand Rapids, Michigan, called the FIT initiative. Pfeiffer is heading up structured physical activities in the schools using innovative tools such as classroom dance parties and exercise DVDs and will help develop community-based after-school programs to help students reach the overall federal guidelines of 60 minutes of exercise each day. Eisenman is training nursing students from Grand Valley State University to assess changes in FIT participants. The College of Human Medicine is coordinating the FIT initiative. Other MSU departments involved include pediatrics and human nutrition.

Funded Research:

Project FIT

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Research on Childhood Obesity

Joe Eisenmann and colleagues from Iowa State University have just finished a grant project, funded by the U.S. Department of Agriculture examining food insecurity, stress, and childhood obesity. The research team found that maternal stress levels have an effect on children’s weight gain, even more than family access to sufficient meals.

Funded Research continued on page 6

2009 Dissertation Defenses

Blue, Kevin A., Smart Golf: An Exploratory Study of Sport Intelligence in Golf (Director, Daniel Gould)
Bruenger, Adam J., Biomechanical Comparison of Three Methods of Back Squatting (Director Eugene Brown)
Chow, Craig M. Social interaction and collective efficacy dispersion: A social network analysis (Director: Deborah Feltz)
Douglas, Martha, Social Interactions of Students with Autism in General Physical Education (Director: Gail Dummer)
Kietzmann, Laura A. Athletics and other predictors of educational expectations and attainment among high school students (Director: Deborah Feltz)
Moore, Marguerite, The Effects of Migraine headache and Physical Activity on Cognitive Function (Director, Tracey Covassin)
Mudd, Lanay, Physical Activity during Pregnancy and Offspring Size (Director, James Pivarnik)
Scranton (Rilko), Dennis M, Classroom Teachers’ Perceptions of Students Who Participate in Daily Physical Education (Director, Crystal Branta)

Faculty News

Deborah Feltz, professor and chairperson, won gold in the 800m run at the National Senior Games, in August 2009, at Stanford University campus.

Daniel Gould, professor and director of the Institute for the Study of Youth Sports, was awarded an honorary doctorate from the Vrije Univieriteit Brussel.

Joe Eisenmann, assistant professor, was appointed to a national task force to address childhood obesity through hospital-based programs. He will be conducting collaborative research on pediatric obesity patients treated at Helen DeVos Children’s Hospital in Grand Rapids, MI (see www.childrenshospitals.net).

James Pivarnik, professor and director of the Center for Physical Activity and Health, was selected by Coca Cola to be a torchbearer in Vancouver. (See article on page 2)
Alumni News

Helen Fry (B.S., ‘61), founder, owner, and director of the Gym Jester Gymnastics and Fitness Center, was one of 16 recipients of the President’s Council of Physical Fitness and Sports Community Leadership Award.

Edith Godleski (M.A., ‘65), retired associate professor at Indiana State University, was inducted into the Indiana State University’s Athletic Hall of Fame in February 2009.

Gail Ganakas (B.S., ‘71), executive director of community education and recreation for Flint Community Schools, received the 2008-09 Women In Sports Leadership Award from the Michigan High School Athletic Association Representative Council.

Barbara Meyer (Ph.D., ‘91), professor of human movement sciences at University of Wisconsin-Milwaukee, served as a sport psychology consultant at the Vancouver 2010 Olympic Winter Games.

Tiffanye Vargas-Tonsing (Ph.D., ‘04) was promoted to associate professor with tenure at the University of Texas -San Antonio.

Craig Paiement (Ph.D., ‘06), has moved from Western Michigan University to take a faculty position at Ithaca College.

Teresa Hepler (Ph.D., ‘08), assistant professor at Adams State College, received the 2010 Sport and Exercise Psychology Dissertation Award from the National Association for Sport and Physical Education.

Kainnon Vilminot (B.S., ‘08) earned his MS in prosthetics from Northwestern University in 2009 and will receive his MS in orthotics from the same institution in October 2010. He built a custom-made face mask for MSU’s basketball player, Raymar Morgan last spring.

Kaleb Thornhill (M.S., ‘09) has a position as an intern for the Detroit Lions’ director of football operations and director of player development. As an undergraduate, Thornhill was a starting linebacker for MSU.

Spartan Profile—Florian Kagerer

I’m the ‘newbie’ in the Department of Kinesiology, and have just survived my first semester here as faculty – thanks to the great support I have received from my colleagues, both in the Department and the College! I am originally from Germany, where I obtained my Ph.D. in Neuropsychology from the Ludwig-Maximilians-University in Munich. Not long after that, I got a Flinn Fellowship from the Kinesiology Department at Arizona State University, and went there as a Postdoc. From there I moved on – yes, I like doing research and traveling the world – to Australia, where I worked in the School of Psychology at the University of Tasmania. After several years ‘down under’ I came back to the US, working in Kinesiology at the University of Maryland until last year.

My general area of research is Motor Control; here I’m looking at developmental aspects, and the neurophysiological underpinnings of how our brain manages to coordinate our arms and hands – and why sometimes this coordination doesn’t work so well. I’m currently teaching KIN465, and will extend my course offerings over the coming semesters. I am keen to provide students with the opportunity to learn and do research about neuromotor control, and how this relates to both healthy people, and populations with motor impairments.

When I’m not stuck in front of a computer, I like to be outdoors, with mountaineering as my former main sport. Since Michigan does not lend itself to this kind of activity easily, I guess I need to switch to sailing, which I also like a lot. Going hiking ‘up north’, together with my wife and our son, is of course something I’m looking forward to as well. Once I’ve got my lab up and running, that is….
(S)partners for Heart Health

(S)partners for Heart Health is a school-based program for enhancing physical activity and nutrition in 5th grade students where MSU faculty, clinicians, medical students and allied health profession students “(S)partner” with elementary school physical education teachers and MSU Extension staff to develop and implement a cost-effective, sustainable program aimed at CVD risk factor prevention among the students. Led by kinesiology alumnus, Dr. Joe Carlson (Department of Radiology), the multidisciplinary team includes faculty from kinesiology (Joe Eisenmann, Karin Pfeiffer, Deborah Feltz) and others from the Colleges of Osteopathic and Human Medicine, Department of Food Science and Human Nutrition, and Department of Psychology. A unique component of this intervention is the involvement of the medical students and undergraduate kinesiology and dietetic students in the assessment and mentoring process. The (S)partner undergraduate students interact with children in the schools during regular physical education lessons and breakout groups as well as helping them track nutrition and exercise goals through a secure web site. The medical students conduct all physical testing. The project has received funding from Blue Cross Blue Shield of Michigan.

Longitudinal Validity of Accelerometers

Karin Pfeiffer and Stewart Trost of Oregon State University are halfway through a 4-year, $1.6 million grant from the National Institutes of Health to compare popular accelerometer models on 5 to 15 year olds and determine how well the calculations used to interpret the accelerometer data hold up over time, especially as children grow. Pfeiffer and Trost have been collecting accurate physical activity measures for each child in individual sessions by testing them with portable metabolic analyzer to measure expired gases and then comparing those data against the data gathered with accelerometers. The researchers also use direct observation to check the accuracy of the accelerometers, watching and recording the kids’ movements. In the end, they hope to know just how much researchers can rely on accelerometers to measure physical activity.

Karin Pfeiffer, center and Justin Blund, left, test student on who is wearing accelerometers around the waist and is hooked up to a portable metabolic analyzer.

Middle School Physical Activity Intervention for Girls

Karin Pfeiffer also has teamed up with Kim Maier, assistant professor of measurement and quantitative methods, and Lorraine Robbins (PI) from nursing, in a 2-year grant from National Institutes of Health, to try to influence sedentary girls’ physical activity behavior. The researchers are working with specially trained school nurses who encourage the girls to choose a more active lifestyle through a technique called motivational interviewing. In an after-school program, the girls have input into the activities in which they would like to participate. The choices have included stepping, African dances, and power-walking to name a few. Changes in the girls’ physical activity levels will be measured using accelerometers and levels of confidence and enjoyment will be measured as well and compared against controls.

KIN staff ladies, Darlene How and JoAnn Janes at Kinesiology’s first Annual Halloween Party.

Student News

Stephanie Carzzo, ATC, master’s degree student in athletic training received a National Athletic Training Association master’s research grant for her thesis, titled “Graduate Assistant Athletic Trainer’s Time Commitments and Cognitive Appraisals.”

Lori Dithurbide, doctoral student in sport and exercise psychology, is the recipient of a Fondation Baxter & Alma Ricard scholarship, which is renewable over 3 years and can amount to $50,000 (Canadian) each year. Students are selected based on academic excellence, leadership, civic pride and commitment to the community.

Nicole Forrester, doctoral student in sport and exercise psychology and 2008 Olympian, was a torchbearer for the 2010 Winter Olympic Games. She carried the torch for 300 meters near her hometown of Markham, Ontario.

Marita Gilbert, doctoral student in sport sociology, was awarded a spot in the 2009 Sisters of the Academy Research BootCamp® this past summer. The BootCamp® is an intense, one-week program designed to assist doctoral students in further development of their research skills. Marita also received an Alliances for Graduate Education and the Professoriate (AGEP) Scholar Award from the MSU Graduate School. This award is made possible by funds from the National Science Foundation.

Emily Hill, doctoral student in exercise physiology, received a student grant from the North American Society for Pediatric Exercise Medicine to support her research on the relationship between cortisol levels and metabolic syndrome in obese adolescents.

Sheila Kelly, doctoral student in motor development, received a 2010 Excellence-in-Teaching citation. This is an all-University award given annually to 6 teaching assistants who excel in teaching and scholarship. She also received a College of Education award for outstanding teaching in fall 2009. In addition, she was one of 8 College of Education doctoral students selected for a summer study abroad trip to China to learn, firsthand, about the Asian superpower’s culture and education systems.

Olga Santiago, doctoral student in sport and exercise psychology, was awarded a travel grant for study abroad to Chiapas, Mexico to learn how poverty, beliefs, culture, community cohesion, social norms, and social capital interact and influence the well being of the people of Chiapas.

Laura Vielbig, undergraduate student in kinesiology, earned a first place award in the 2009 University Undergraduate Research and Arts Forum for her research on comparing physical activity level during structured and unstructured activities in children and adolescents.
Michigan State’s Kinesiology fraternity, Phi Epsilon Kappa, (PEK) has continued to grow substantially over the past year and now has over 70 active members. The majority of student members who take part in PEK are undergraduate students but this year more graduate students became members as well. The members of PEK represent a variety of kinesiology-related careers including physical therapy, occupational therapy, cardiac rehabilitation, and athletic training.

PEK started the 2009 fall semester by walking in the annual homecoming parade and distributing candy to the parade attendees. The candy included information on PEK and kinesiology in the hopes of increasing awareness of the kinesiology major and the fraternity. Homecoming week also involved a PEK tailgate at the football game. Members at the tailgate volunteered to help out at the College of Education annual homecoming tent tailgate with painting faces and overseeing tailgate games for young Spartan fans. Later on in October, members took part in a service project making goody bags for patients in the Pediatric Ward at Sparrow Hospital. A few members were able to personally deliver the Halloween treats to the patients. In celebration of the Halloween holiday and to have some fun, PEK members went to a haunted house and hayride in Grand Ledge.

In November, the annual initiation ceremony for new members was held. The initiation of 46 new members was a very proud moment for the group. The initiation of 46 new members nearly doubled the size of the fraternity which had 47 members last year. At the end of November, Phi Epsilon Kappa partnered with the Graduate Student Organization and Department of Kinesiology and raised money for the East Lansing Haven House for the homeless.

PEK started the 2010 spring semester by taking part in the local Polar Plunge at Eagle Eye Golf Course. Participating members raised money to support the Special Olympics and jumped into icy cold water. Members dressed as athletes in representation of PEK. Needless to say, the members all represented sprinters as they ran for the hot chocolate after the plunge. Near the end of January, over twenty PEK members cheered on the MSU hockey team to a victory over U of M. The main service project that took place in February involved PEK members getting creative. Over 100 hand-made Valentine’s were prepared for the patients at the Pediatric Ward at Sparrow Hospital. 

Laura Gibson, PEK President

The Robert Wood Johnson Foundation funded two separate studies at MSU to examine how ‘exergames’ can be designed to improve physical activity. First, Deb Feltz (PI) and Joe Eisenmann from kinesiology, and Norbert Kerr from psychology, are using the Eye Toy camera and PlayStation 2 to measure what characteristics in a virtual partner will motivate people to exercise harder, longer, and more frequently. A key hurdle in dealing with the physical inactivity problem in the U.S. is the problem of motivation. If people’s motivation can be improved to increase the intensity, duration, and frequency of exercise by participating with a partner, they will realize better health outcomes. An exercise partner can help, but unfortunately, live exercise partners are not always the most practical. Individuals can become discouraged if they believe they can never keep up with their partner, or they become bored because their partner is always slower. This problem can be addressed with a virtual partner. Feltz and her team will analyze and adapt the characteristics of a virtual partner, including body composition, gender, and age to see which are most effective at improving endurance and exercise time.

A second grant from MSU, led by Wei Peng and Brian Winn of the Department of Telecommunication, Information Studies and Media, received funding to explore how digitally delivered games such as Wii Fit and Dance Dance Revolution can improve health. Karin Pfeiffer is part of this team of researchers who are developing the Mount Olympus game, a 3D fantasy role-playing game. This game requires players to move their upper and lower body in order to control their character’s movements throughout the world of the game. Overweight and inactive college students will participate in the study, which randomly assigns them either to play Mount Olympus or to use a motivational Web site designed to promote and support physical activity. The researchers will examine the extent to which each media activity meets individuals’ needs for competence, autonomy, and social relatedness, and how meeting these needs may motivate engagement in the activity.
National Wrestling Coaches Association

Coaching Leadership Program Development Grant

The Institute for the Study of Youth Sports (ISYS) has partnered with the National Wrestling Coaches Association (NWCA) to develop and deliver a curriculum to enhance the coaching leadership skills of America’s College wrestling coaches. The project is designed to develop a state-of-the art leader development program based on the business leadership research and best practices, and what is known about effective coaching leadership. The program employs a blended instructional approach involving online instructional modules; a Coaching Leadership Study Guide; a pre and post-course 360 degree coaching leadership evaluation; a 2 day Coaches Leadership Institute; an individualized coaching plan for enhancing one’s program; and peer mentoring where participating coaches receive one-on-one mentoring from highly successful experienced coaches. In this, Year 2, of this 3-year grant, Dan Gould and his ISYS staff developed six online modules and designed and facilitated the two-day leadership course at the NWCA national convention.

Evaluating Changes in Depression Symptoms and Neurocognitive Impairments Among Male and Female Concussed High School and Collegiate Athletes

Tracey Covassin and her research team have a two-year grant from the National Operating Committee on Standards for Athletic Equipment to investigate depression symptoms, neurocognitive impairments, postural stability, and post-concussion symptom scores among concussed male and female high school and collegiate athletes. Currently, there are 17 high schools and colleges across three states participating in this study. To-date they have conducted almost 2,000 neurocognitive and depression baseline tests and 90 post-concussion tests.

Perceived Social Support and Athletes Resilience Following Athletic Injury

The Centers for Disease Control and Prevention is funding a research study that supports the development of interventions that incorporate social support to reduce the psychological distress of injured athletes and facilitate their recovery and return to play. In this project, Tracey Covassin and her research team have adopted a prospective research study design with repeated measures to identify the relationship between athletic injury and the symptoms of depression and anxiety among Division I athletes involved in 9 NCAA competitive sports. In this, Year 3, of the 5-year grant, they have conducted over 400 baseline test and 100 post-injury follow-up tests.